

# Epidemiological Pattern of Acne Lesions

Nazia Khalil, Aneela Asghar, M. Arshad, M. Hassan

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## ABSTRACT

**Objectives:** To study the epidemiological patterns of different lesions of Acne Vulgaris according to different parameters.

**Setting:** out patient department of Dermatology of DHQ Hospital, and Allied Hospital, Faisalabad.

**Study Design:** case descriptive study.

**Period:** (May 2007 to March 2008).

**Materials and Methods:** 100 consecutive cases of Acne irrespective of age and sex, presenting in the outdoor and diagnosed by an FCPS Dermatologist were enrolled. The detailed clinical examination and

history alongwith other data regarding age, sex, marital status, menstrual problems, skin type, the nature and distribution of lesions were entered on a questionnaire specially designed for this purpose.

**Results:** The teenagers (61%) were having more acne specially females (59%), more in unmarried (85%). The people with oily skin (82%) were suffering more. Menstrual problems showed a significant ( $P < 0.01$ ) role.

**Key Words:** Acne, type, pattern.

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## INTRODUCTION

Acne vulgaris is a chronic inflammatory skin condition, involving hair follicles and sebaceous glands due to their over activity, commonly affecting the face, chest and back. These glands are active due to the hormone testosterone, produced in men from the testes and in women from the ovaries and the adrenals[1]. Acne lesions are commonly referred to as pimples, spots, plocks or zits. These acne lesions include whiteheads, blackheads, papules, pustules, nodules and cysts[2]. Pimples are formed when hair follicles under skin clog up. Anyone can get acne, but it is more common in teenagers and young adults. It is not serious, but it can lead to scarring[3] causing disfigurement and personal anxiety.

Various factors for acne include hormonal activity, oily cosmetics, dirty skin, picking or squeezing, sunlight, stress and in girls: menstruation, hyperactive sebaceous glands, hard scrubbing of the skin, accumulation of dead skin cells and pregnancy pills[2,4].

The two types of bacteria found on normal and acne type skin are *Staphylococcus epidermidis* and *Propionibacterium acnes*. These bacteria thrive best in low oxygen atmosphere provided by a blocking of follicle by black head. The bacteria grow happily, splitting the triglycerides into fatty acids[5]. The most noticeable sign of acne is red, inflamed skin leading to

vasodilatation and oedema. White blood cells find their way out of blood vessels and accumulate inside and around the affected hair follicle. As the inflammation in the dermis worsens the acne papules are formed. When the white cells collect inside the damaged hair follicle a pustule develops. Blackheads or comedones, is an early and important development in the acne.

Very strong relationship with hormonal changes has been suggested. Many girls and young women develop spots just before and during their periods, a signal for the start of their periods a few days later. It is probably due to hormonal change, which affects the skin[5].

## MATERIAL AND METHODS

The study was conducted for a period of 6 months in the out patient department of Dermatology in DHQ Hospital and Allied Hospital, Faisalabad. A questionnaire was designed for entry of the detailed clinical examination and history along with other data regarding age, sex, marital status, menstrual problems and type of skin. The nature, type, distribution and complications of the lesions were also entered in the same questionnaire. 100 consecutive cases of acne, diagnosed by a qualified Dermatologist with FCPS degree were registered in the questionnaire. The statistical analysis of the collected data and all the

different parameters were checked by Minitab, Crosstab applying Pearson chi square test and ANOVA (Analysis of variance).

## RESULTS

The 5 different types of the acne lesions are shown in (Table-1) and morphological description of the acne lesions in Figure-1.

**Table-1**

**Types of Lesions of Acne vulgaris in affected subjects**

Type of Lesion	Frequency (f)	Percent (%)
Pustule	37	37.0
Papule	17	17.0
Mixed	27	27.0
White	9	9.0
Black	10	10.0
Total	100	100.0



**(a) White head comedone**



**(b) Black head comedone**



**(c) Purple**



**(d) Pustule**



**(e) Mix Lesion**

**Fig.1. a-e: Five Types of Grading Lesion (a) W. H. C. (b) B. H. C. (c) Papule (d) Pustule (e) Mix Lesion**

The body parts involved was face, neck, chest, shoulder and back. It appeared 80% on the face and rest on the different parts of the body (Figure-2)



**Fig- 2: Acne vulgaris on different parts of body**



**Fig-3: Severity of Acne vulgaris in male**

It was observed that teenagers were mostly affected and current results indicated that 16-21 years of age groups were mostly affected (69%) (Table2)

**Table-2**

LESION OF ACNE	AGE GROUPS (YEARS)				TOTAL
	<=18	19-21	22-24	>=25	
<b>Pustule</b>	10 30.3%	11 30.6%	5 41.7%	10 52.6%	36 36.0%
<b>Papule</b>	4 12.1%	8 22.2%	3 25.0%	2 10.5%	17 17.0%
<b>Mixed</b>	13 39.4%	10 27.8%	1 8.3%	3 15.8%	27 27.0%
<b>White</b>	4 12.1%	2 5.6%	3 25.0%	0 0.0%	9 9.0%
<b>Black</b>	2 6.1%	5 13.9%	0 0.0%	4 21.1%	11 11.0%
<b>Total</b>	33 100.0%	36 100.0%	12 100.0%	19 100.0%	100 100.0%

Results indicated that females (59%) were affected more than males (41%) (Table 3), but disorder was more severe in males (figure 3).

**Table-5**

Lesion of Acne	Sex		Total
	Female	Male	
<b>Pustule</b>	20(33.9%)	16(39.0%)	36(36.0%)
<b>Papule</b>	11(18.6%)	6(14.6%)	17(17.0%)
<b>Mixed</b>	17(28.8%)	10(24.4%)	27(27.0%)
<b>White</b>	5(8.5%)	4(9.8%)	9(9.0%)
<b>Black</b>	6(10.2%)	5(12.2%)	11(11.0%)
<b>Total</b>	599(100.0%)	41(100.0%)	100(100.0%)

It was observed 85% of cases were unmarried population and 15% married population (Table 4).

**Table-4**

**Lesion of Acne According to Marital Status**

Lesions of Acne	Marital Status		Total
	Married	Unmarried	
<b>Pustule</b>	8(53.3%)	28(32.9%)	36(36.0%)
<b>Papule</b>	3(20.0%)	14(16.5%)	17(17.0%)
<b>Mixed</b>	1(6.7%)	26(30.6%)	27(27.0%)
<b>White</b>	1(6.7%)	8(9.4%)	9(9.0%)
<b>Black</b>	2(13.3%)	9(10.6%)	11(11.0%)
<b>Total</b>	15(100.0%)	85(100.0%)	100(100.0%)

The relationship of Acne vulgaris with menstruation cycle is displayed in Table 5 & 6.

**Table-5**

**Lesion of Acne According to Premenstrual Flare**

Lesion of Acne	Premenstrual Flare		Total
	No	Yes	
<b>Pustule</b>	7(21.9%)	12(48.0%)	19(33.3%)
<b>Papule</b>	7(21.9%)	4(16.0%)	11(19.3%)
<b>Mixed</b>	11(34.4%)	5(20.0%)	16(28.1%)
<b>White</b>	2(6.3%)	3(12.0%)	5(8.8%)
<b>Black</b>	5(15.6%)	1(4.0%)	6(10.5%)
<b>Total</b>	32(100.0%)	25(100.0%)	57(100.0%)

**Table-6**  
**Lesion of Acne According to Post Menstrual Flare**

Lesion of Acne	Post menstrual Flare		Total
	No	Yes	
<b>Pustule</b>	18 41.9%	1 7.1%	19 33.3%
<b>Papule</b>	6 14.0%	5 35.7%	11 19.3%
<b>Mixed</b>	9 20.9%	7 50.0%	16 28.1%
<b>White</b>	5 11.6%	0 0.0%	5 8.8%
<b>Black</b>	5 11.6%	1 7.1%	6 10.5%
<b>Total</b>	43 100.0%	14 100.0%	57 100.0%

The Skin type involved in acne vulgaris was the oily skin (82%) as shown in Table 7

**Table-7**  
**Lesion of Acne According to Skin Type**

Lesion of Acne	Skin Type				Total
	Dry	Normal	Oily	Semi oily	
<b>Pustule</b>	1 25.0%	3 37.5%	29 35.0%	3 50.0%	36 36.0%
<b>Papule</b>	1 25.0%	0 0.0%	16 19.5%	0 0.0%	17 17.0%
<b>Mixed</b>	0 0.0%	1 12.5%	23 28.0%	3 50.0%	27 27.0%
<b>White</b>	0 0.0%	3 37.5%	6 7.3%	0 0.0%	9 9.0%
<b>Black</b>	2 50.0%	1 12.5%	8 9.8%	0 0.0%	11 11.0%
<b>Total</b>	4 100.0%	8 100.0%	82 100.0%	6 100.0%	100 100.0%

## DISCUSSION

Acne is a disease that affects the hair follicles and sebaceous glands. When the follicle of a skin gland clogs up, a pimple grows.

Most pimples are found on the face, neck, back, chest, and shoulders. Acne is not a serious health threat but it can cause scars[6].

Henna et al. (2003) and Pike and Bethesda (2007) observed that acne vulgaris is a common skin disease found in 85% young adults and consistent with current study. It is also found that Acne is an inflammatory skin condition in which pimples are formed on different parts of the body[1]. However, the

results of current study indicate that Acne affects the face, chest, shoulder and back.

In current study modified grading of lesion is observed as described by Balaji (2005), Pike and Bethesda (2007) as comedone, papule, pustule, nodule and cyst. It is also observed in present study that pre-menstrual flare (25%) and post-menstrual (14%) flare play a significant role in Acne vulgaris. Current results are compatible with Marks (1984) who observed spots just before and during menstrual period in many girls and young women.

Acne can produce anxiety, embarrassment, depression and other psychological morbidity [7,8,9,10] and this depression also has a relation with some medicine (isotretinoine, minocycline etc) used in acne[11] present study also shows anxiety and embarrassment in subjects which were affected with Acne.

Marks [5], Pike and Bethesda [3] found it common in young adults and results of current study also indicate teenagers (61%) mostly affected by Acne vulgaris. In current study it is observed females (59%) are more affected than that of males (41%) but severity of disease is more in case of males as described by Williams and Layton [14]. Current study reveals that oily skin (82%) is a main type of skin, causes Acne vulgaris as described by Collier [1].

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#### **AUTHORS**

- **Dr. Nazia Khalil**  
BS Zoology, G.C University Faisalabad,  
Senior Registrar
- **Dr. Aneela Asghar**  
Dermatology, PMC/Allied DHQ Hospital  
Faisalabad.
- **Dr. Muhammad Arshad**  
Department of Microbiology, Agriculture  
University Faisalabad.
- **Dr. Muhammad Hassan**  
Department of Pharmacy, G.C University,  
Faisalabad, Pakistan.